

IN THE CLAIMS:

1. (canceled)
2. (currently amended) The method of claim 6, wherein detecting the magnetic fieldresonance imaging (MRI) interference signal comprises detecting a high magnetic field having a magnetic field strength above a predetermined threshold.
3. (currently amended) The method of claim 2, wherein detecting the magnetic fieldresonance imaging (MRI) interference signal comprises detecting the high magnetic field using a Hall Effect sensor disposed in operative communication with a cardiac activity sensing circuit of the implantable medical device.
4. (currently amended) The method of claim 6, wherein enabling the at least one preventive measure further comprising opening a case switch for the implantable medical device in response to the MRI interference signal.
5. (currently amended) The method of claim 4, wherein enabling the at least one preventive measure further comprising opening the case switch for the implantable medical device and electrically isolating one or more leads from a can for the implantable medical device.
6. (currently amended) A method of sensing cardiac activity in an implantable medical device in the presence of magnetic resonance imaging (MRI) interference, comprising:
detecting a magnetic field having characteristics consistent with an resonance imaging-operating (MRI) scannerinterference signal and providing an MRI interference signal related to the detected MRI scanner;
enabling at least one preventive measure to protect an implantable medical device from interference by the magnetic resonance imaging (MRI) interference signal; and

Art Unit: 3737
Serial No. 10/004,237
Page 4

in response to receipt of the MRI interference signal, switching from a first cardiac activity sensing mode that is relatively more affected by the magnetic resonance imaging (MRI) interference signal to a second cardiac activity sensing mode this is relatively less affected by the magnetic resonance imaging (MRI) interference signal;
wherein switching from the first sensing mode to the second cardiac activity sensing mode comprises using utilizes at least one of: a can-based accelerometer, a pressure sensor on a lead, an accelerometer on a lead, an accelerometer coupled to a connector block, a blood flow sensor, a heart motion sensor based on time-of-flight, a temperature sensor, an impedance-based sensor, and an oxygen sensor in the second sensing mode.

7. (canceled)

8. (currently amended) The device of claim 13, wherein the means for detecting is capable of detecting the magnetic field resonance imaging (MRI) interference signal by detecting a high magnetic field having a magnetic field strength above a predetermined threshold.

9. (Original) The device of claim 8, wherein the predetermined threshold is about 0.17 Tesla.

10. (currently amended) The device of claim 8, wherein the means for detecting is capable of detecting the magnetic field resonance imaging (MRI) interference signal by detecting the high magnetic field using a Hall Effect sensor in communication with disposed in the implantable medical device.

11. (currently amended) The device of claim 10, ~~wherein the actuator is capable of further comprising means for opening a case switch for the implantable medical device in response to receipt of the MRI interference signal.~~
12. (currently amended) The device of claim 11, ~~wherein the actuator is capable of further comprising means for electrically separating one or more leads for the implantable medical device from a portion of a housing for the implantable medical device in response to receipt of the MRI interference signal.~~
13. (currently amended) A device adapted to sense cardiac activity in the presence of magnetic resonance imaging (MRI) interference, comprising:
~~means for a detector capable of detecting a magnetic field consistent with the characteristics of an resonance imaging (MRI) scanning device interference signal and providing an MRI interference signal related to the detection of the magnetic field;~~
~~an actuator capable of enabling at least one preventive measure to protect an implantable medical device from interference by the magnetic resonance imaging (MRI) interference signal; and~~
~~a switching means coupled to the means for detecting, for capable of switching from a first cardiac activity sensing mode that is relatively more affected by the magnetic resonance imaging (MRI) interference signal to a second cardiac activity sensing mode that is relatively less affected by the magnetic field resonance imaging (MRI) interference signal in response to receipt of the MRI interference signal;~~
~~wherein the second cardiac activity sensing mode employs at least one of: a can-based accelerometer, a pressure sensor on a lead, an accelerometer on a lead, an accelerometer coupled to a connector block, a flow sensor, a heart motion sensor based on time-of-flight, a temperature sensor, an impedance-based sensor, and an oxygen sensor is used in the second sensing mode.~~

Art Unit: 3737
Serial No. 10/004,237
Page 6

14. (canceled)

15. (currently amended) The device of claim 19, wherein the means for detecting the magnetic field~~resonance imaging (MRI)~~ interference signal comprises means for detecting the ~~magnetic resonance imaging (MRI)~~ interference signal by detecting a high magnetic field having a magnetic field strength above a predetermined threshold.

16. (currently amended) The device of claim 15, wherein the means for detecting the magnetic field~~resonance imaging (MRI)~~ interference signal comprises means for detecting the high magnetic field using a Hall Effect sensor disposed in the implantable medical device.

17. (currently amended) The device of claim 19, wherein the device is an implantable medical device, and wherein the means for switching further for enabling the at least one preventive measure comprises means for opening a case switch for the implantable medical device in response to receipt of the magnetic field.

18. (currently amended) The device of claim 17, wherein the implantable medical device includes at least one lead and a can, and wherein the means for switching further enabling the at least one preventive measure comprises means for opening the case switch for the implantable medical device and means for electrically separating the at least one lead from the can in response to the detection of the magnetic field.

19. (currently amended) A device for sensing cardiac activity in the presence of an interference signal attributable to a magnetic resonance imaging (MRI) apparatus, comprising:

means for detecting a magnetic field consistent with an magnetic resonance imaging (MRI) scanning system-interference signal;

~~means for enabling at least one preventive measure to protect an implantable medical device from interference by the magnetic resonance imaging (MRI) interference signal; and~~

~~means for switching from a first cardiac activity sensing mode that is relatively more affected by the magnetic fieldresonance imaging (MRI) interference signal to a second cardiac activity sensing mode that is relatively less affected by the magnetic fieldresonance imaging (MRI) interference signal;~~
~~wherein switching from the first cardiac activity sensing mode more affected by the magnetic resonance imaging (MRI) interference signal to the second cardiac activity sensing mode less affected by the magnetic resonance imaging (MRI) interference signal comprises operatively coupling to a one of the following cardiac activity sensing circuitry disposed within said implantable medical device: using at least one of a can-based accelerometer, a pressure sensor on a lead, an accelerometer on a lead, an accelerometer disposed on a connector block, a flow sensor, a heart motion sensor based on time-of-flight, a temperature sensor, an impedance-based sensor and an oxygen sensor in the second sensing mode.~~

20. (new) A method according to claim 6, wherein detecting the magnetic field comprises detecting a high magnetic field having a magnetic field strength of about 0.2 Tesla (2000 Gauss) to about 10 Tesla (100,000 Gauss).

21. (new) A method according to claim 6, wherein detecting the magnetic field comprises detecting a high magnetic field having one of: a static gradient magnetic field, a variable gradient magnetic field with a frequency of about 5 KHz, a radio-frequency pulses of up about 10MHz to about 50 MHz, a variable magnetic field having a frequency of about 64 Hz.

22. (new) A device according to claim 13, wherein means for detecting the magnetic field comprises detecting a high magnetic field having a magnetic field strength of about 0.2 Tesla (2000 Gauss) to about 10 Tesla (100,000 Gauss).

Art Unit: 3737
Serial No. 10/004,237
Page 8

23. (new) A device according to claim 13, wherein the means for detecting the magnetic field comprises detecting a high magnetic field having one of: a static gradient magnetic field, a variable gradient magnetic field with a frequency of about 5 KHz, a radio-frequency pulses of up about 10MHz to about 50 MHz, a variable magnetic field having a frequency of about 64 Hz.
24. (new) A device according to claim 19, wherein the means for detecting the magnetic field comprises detecting a high magnetic field having a magnetic field strength of about 0.2 Tesla (2000 Gauss) to about 10 Tesla (100,000 Gauss).
25. (new) A device to claim 19, wherein the means for detecting the magnetic field comprises detecting a high magnetic field having one of: a static gradient magnetic field, a variable gradient magnetic field with a frequency of about 5 KHz, a radio-frequency pulses of up about 10MHz to about 50 MHz, a variable magnetic field having a frequency of about 64 Hz.